Appl. Serial No. 10/742,899
Amendment dated April 11, 2005
Reply to Office Action of October 15, 2005

Amendments to the Drawings

The attached sheet of drawings includes the proposed addition, for the purpose of illustration and clarity, of certain reference numerals to Figs. 1, 6a, 6b, 6c, and 6d. A set of replacement drawings (10 sheets) is submitted herewith.

Attachment: Replacement Sheet
Annotated Sheet Showing Changes

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REMARKS/ARGUMENTS

Applicant has amended the specification for matters of form, and has added certain reference numerals to the drawings to more clearly illustrate the invention as described in the specification.

Claims 1-17, as amended, remain in the application. Parent claim 1, upon which claims 3-7 and 13-17 depend, has been amended to include the subject matter of cancelled claim 2, and to more particularly and definitely define the novelty of the invention over the teachings of the cited prior art. Allowable claim 8, which is directed to the mating headpiece 4 of Fig. 1 and upon which allowable claims 9-12 depend, has been rewritten in independent form.

Allowance of the claims, as amended, is courteously solicited for the following reasons. According to Applicant's invention, improved closure means are provided for sealing the dispenser in such a manner that "oxidation of the paste-like product to be dispensed is avoided." (page 2, lines 17-20). To this end, when the main headpiece 3 is biased by spring 7 toward its upper first position illustrated in Figs. 1 and 6a, the upper cylindrical surface 31b of bearing means 31 arranged on the main headpiece 3 initially closes the radially outwardly directed product supply outlets 58 at the upper end of the pressure piston 5. At this time, the upper end surface 54 of the delivery piston is spaced by the distance "a" from the adjacent surface 35 of the headpiece 3. When the main headpiece is depressed downwardly relative to the piston 5 to the intermediate second position shown in Fig. 6b, the bearing surface 31a is displaced downwardly to uncover and open the piston outlet opening 58, thereby to afford communication between the delivery chamber 100 and the discharge channel 32 via the longitudinal piston channel 50a and the outlet openings 58. Upon further downward displacement of both the headpiece and the piston relative to the container (Fig. 6c), the paste-like product is pumped by the pressure piston 5 from the delivery chamber 100 to the discharge channel 32 for discharge via the main headpiece outlet 39. Therefore, in accordance with a characterizing feature of the invention, "upon a stroke movement of the headpiece for discharging paste-like material a release of the delivery channel outlet opening is easily achieved in that the delivery shaft is moved relative to the bushing. The preferred variant is not only simple, but also permits an arrangement of the delivery channel outlet

opening in direct vicinity of the inlet opening of the discharge channel for the product to be delivered." (page 4, lines 1-9) When the headpiece is returned by spring 7 to its initial first position relative to the piston 5 (Fig. 6d), the upper bushing surface 31b again closes the piston outlet openings 58.

As stated in the specification on page 19, lines 16–26, the two embodiments of the invention illustrated in Figs. 1 and 7 offer the advantage "that the delivery channel openings 58 will only be exposed in the delivery channel 32 after a relative movement between the headpiece 3 and the pressure piston 5. For a delivery of the paste-like product from the delivery chamber towards the product discharge opening 32a it is not necessary that the internal pressure first built up in the delivery chamber 100 should be exploited for opening a non-return valve positioned therebehind in the direction of delivery. Accordingly, the paste-like product can be delivered by applying a small force. Furthermore, the two aforementioned embodiments offer the advantage that the paste-like product is pulled back in the discharge channel 32 in a direction opposite to the delivery direction upon actuation of the headpiece...."

Applicant respectfully contends that the present invention as recited in the amended claims is clearly distinguishable from the teachings of the cited Czech patent No. 4,685,594. In this reference, the actuator cap 7 is biased upwardly by spring 36 toward the initial position of Fig. 2.When in this condition, the slot 33 in the dispenser piston 22 is **open** and in communication with the communication space 37 and the pump chamber 15. "As actuator cap 7 is now depressed against the biasing force of return spring 36 to be displaced axially downwardly on outer guide section 6, tube portion 17 of actuator cap 7 is moved downwards by a distance corresponding to the axial length of first cylinder recess 26, while dispenser piston 22 including guide tube 23 is kept stationary by the action of frictional forces and by the mass of the paste-like product contained in pump chamber 15... The displacement of tube portion 17 relative to guide tube 23 at the same time results in the **obturation of slot 33** in the manner of a slide valve control, whereupon end rim 32 comes into contact with the rear face of dispenser piston 22 to act as an actuator element for dispenser piston 22." (column 5, line 54 to column 6, line 3) Thus, the structure and operation of the Czech dispenser is

completely different from that of Applicant's invention.

Applicant further points out that in the Czech dispenser, the head piece 7 includes a discharge channel 19 which has an initial or lower axial portion and a subsequent or upper lateral portion. The axial portion at an intermediate portion thereof includes a flap valve 28 allowing a flow of past-like product from the pump chamber 15 into the axial portion and thereafter to the lateral portion, while preventing a flow in the opposite direction. The pump chamber must be exposed to a significant pressure that the closing forces of the flap valve can be overcome otherwise no discharge of past-like product into the discharge channel occurs. This means that increased forces have to be applied to the head piece for obtaining a discharge of products. Moreover the problem exists that a significant amount of product which has passed the flap valve is held withdrawn in the enlarged discharge path between the flap valve and the discharge opening of the discharge channel. Thus there are significant amounts of the product which communicate in permanent manner via the discharge opening with the ambient air and may be affected thereby. For instance certain type of past-like product like food stuff may undergo a change in flavour and colour due to oxydation. Pharmaceutical substances may lose the pharmaceutical effects. Many cosmetic products prior to use should be protected from permanent exposure to air for preserving full cosmetic effects. More important is that all products exposed to air can dry and thereby may prevent an opening of the flap valve ,in a worst case preventing further use of the dispenser. These problems are fully overcome by the specific valve structure used in the present invention which not only significantly reduces the amount of dead masses of product remaining in the discharge channel after use, but also is not affected in its function by an amount of product in the discharge channel which may have become dry. Further this specific valve structure has the advantage that in course of the return stroke movement of the headpiece into the initial position the valve does not immediately shut off like a flap valve does, so that at least some amount of paste-like product in the discharge channel temporarily is exposed to a negative pressure in the pumping chamber caused by the return stroke and thereby returned into the pumping chamber. Similarly, none of the remaining references of record anticipates or renders obvious Applicant's invention recited in the amended claims.

Since all the matters of form in the specification have been complied with, since claims 8-12 have been indicated to be directed to allowable subject matter, and since the remaining claims have been amended to more particularly and definitely define the novelty of the present invention over the teachings of the prior art, it is respectfully believed that the application is now in condition for allowance.

Favorable action is courteously solicited.

Respectfully submitted,

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